Claims:

1. An amorphous alloy represented by the formula:

$$Ca_{(100-t)}Al_xCu_yAg_nZn_mMg_pNi_r$$

wherein

x, y, n, m, p and r are atomic percentages, wherein

x is a number selected from about 5 to about 35;

y is a number selected from 0 to about 15;

n, m, p and r are independently a number selected from 0 to about 20,

wherein $y + n + m + p + r$ is less than 30; and

t is the sum of x, y, n, m, p and r, with the proviso that t is a number selected from about 25 to about 55.

2. The alloy of claim 1, wherein r is 0.

3. The alloy of claim 1, wherein said alloy is processable into bulk amorphous samples of at least about 2 mm in thickness in its minimum dimension.

4. The alloy of claim 1, wherein said alloy has a Tg of at least 200°C.

5. The alloy of claim 2, wherein x is a number selected from about 25 to about 40, and $y + n + m + p$ is less than 20.

6. The alloy of claim 5 wherein the alloy is represented by the formula:

$$Ca_{(100-t)}Al_xQ_g$$

wherein Q is an element selected from the group consisting of Cu, Ag, Zn and Mg;

x is a number selected from about 25 to about 35;

g is a number selected from 0 to about 15; and

t is the sum of x and g.

7. The alloy of claim 6 wherein g is 0.

8. The alloy of claim 1 wherein the alloy is represented by the formula:

$$Ca_tAl_xQ_yZn_mMg_p$$

wherein Q is Cu or Ni;

t, x, y, m and p are atomic percentages, wherein

t is a number selected from about 50 to about 60;

x is a number selected from about 5 to about 15;

y is a number selected from about 0 to about 10;

m is a number selected from about 10 to about 20; and

p is a number selected from 10 to about 15.

9. The alloy of claim 8 wherein t is a number selected from about 55 to about 60, and p is about 15.

10. An article of manufacture comprising a calcium-based amorphous alloy represented by the formula:

$$Ca_{(100-t)}Al_xCu_yAg_nZn_mMg_pNi_r$$

wherein

x, y, n, m, p and r are atomic percentages, wherein

x is a number selected from about 5 to about 35;

p is a number selected from about 5 to about 15;

r is a number selected from 0 to about 10;

y, n and m are independently a number selected from 0 to about 20,

wherein y + n + m is less than about 21; and

t is the sum of x, y, n, m, p and r, with the proviso that t is a number selected from about 35 to about 55.

11. The article of manufacture of claim 10 wherein

x is a number selected from about 5 to about 15;

y is a number selected from 0 to about 15;

n is 0;

m is a number selected from about 10 to about 20;

p is a number selected from about 10 to about 15;

r is a number selected from 0 to about 10, and t is a number selected from about 35 to about 50.

12. The article of manufacture of claim 11 wherein the calcium-based amorphous alloy is represented by the formula:

$$Ca_tAl_xQ_yZn_mMg_p$$

wherein Q is Cu or Ni;

t, x, y, m and p are atomic percentages, wherein

t is a number selected from about 50 to about 60;

x is a number selected from about 10 to about 15;

y is a number selected from about 0 to about 10;

m is a number selected from about 10 to about 20; and

p is a number selected from 10 to about 15.

13. The article of manufacture of claim 10 wherein the calcium-based amorphous alloy is represented by the formula:

$$Ca_{(100-t)}Al_xCu_yAg_nZn_mMg_p$$

wherein

x, y, n, m and p are atomic percentages, wherein

x is a number selected from about 25 to about 35;

n is a number selected from about 0 to about 20;

m and y are independently a number selected from 0 to about 15,

p is a number selected from about 0 to about 20; and

t is the sum of x, y, n, m and p, with the proviso that t is a number selected from about 35 to about 50.

14. A method of preparing homogeneous ingots of a CaAl-based amorphous alloy comprising Cu or Ag, said method comprising the steps of

placing all the elements of the alloy, except the Cu and Ag elements in a boron-nitride-coated graphite crucible;

placing the Cu and Ag elements in the crucible on top of, and in contact with, the other alloy elements; and

melting the combination together to form a homogenous ingot.